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FIG.1(a)

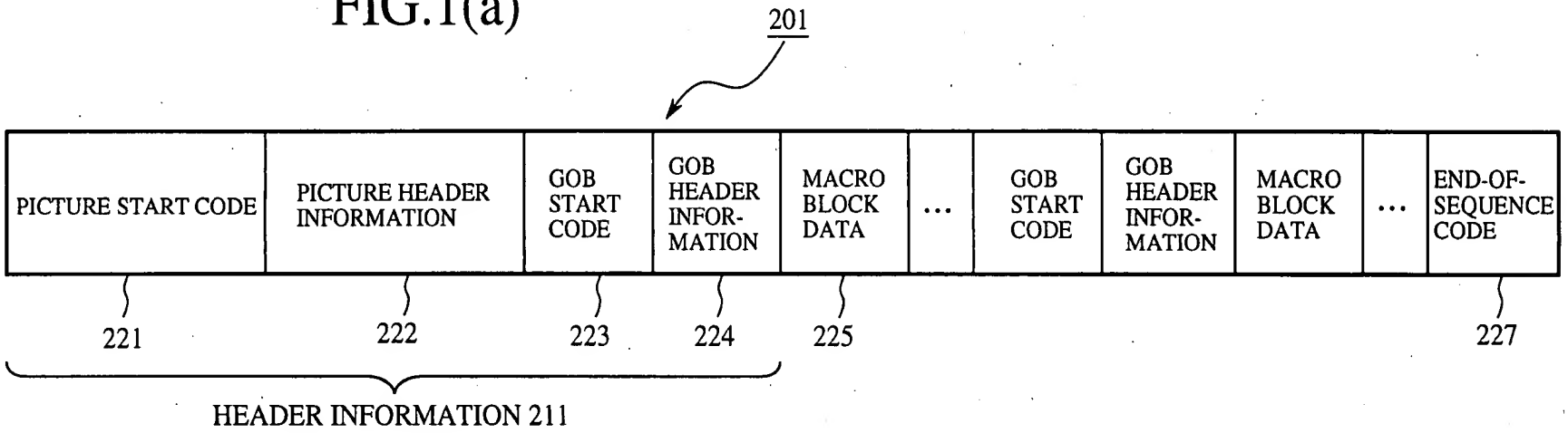

FIG.1(b)

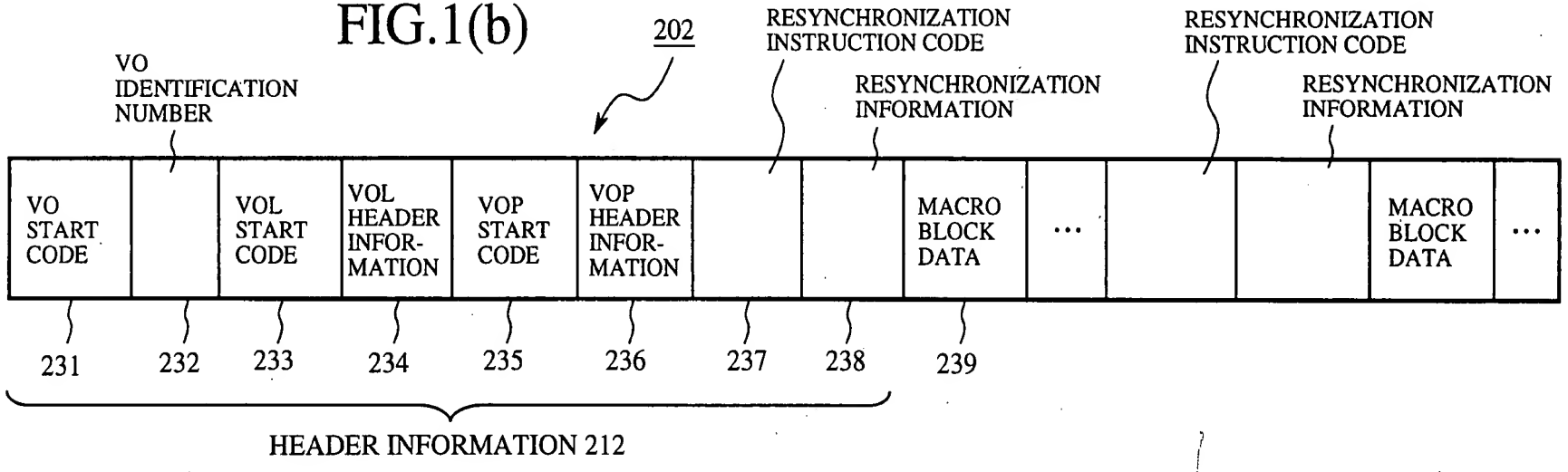

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FIG.2(a)

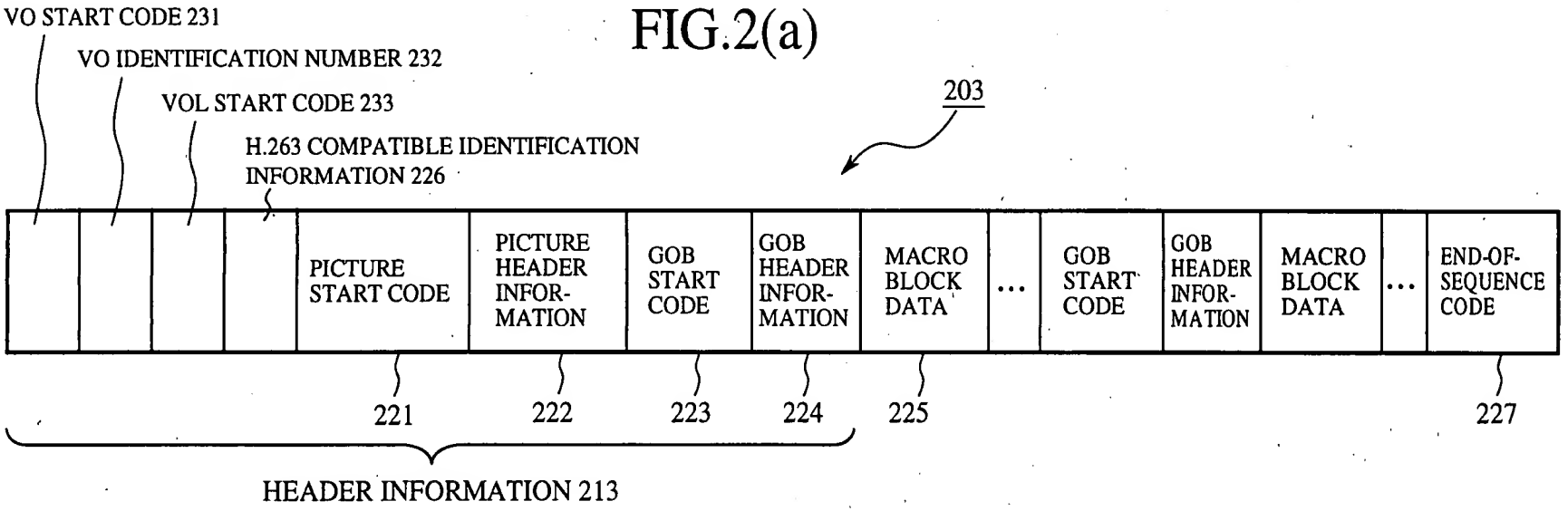

FIG.2(b)

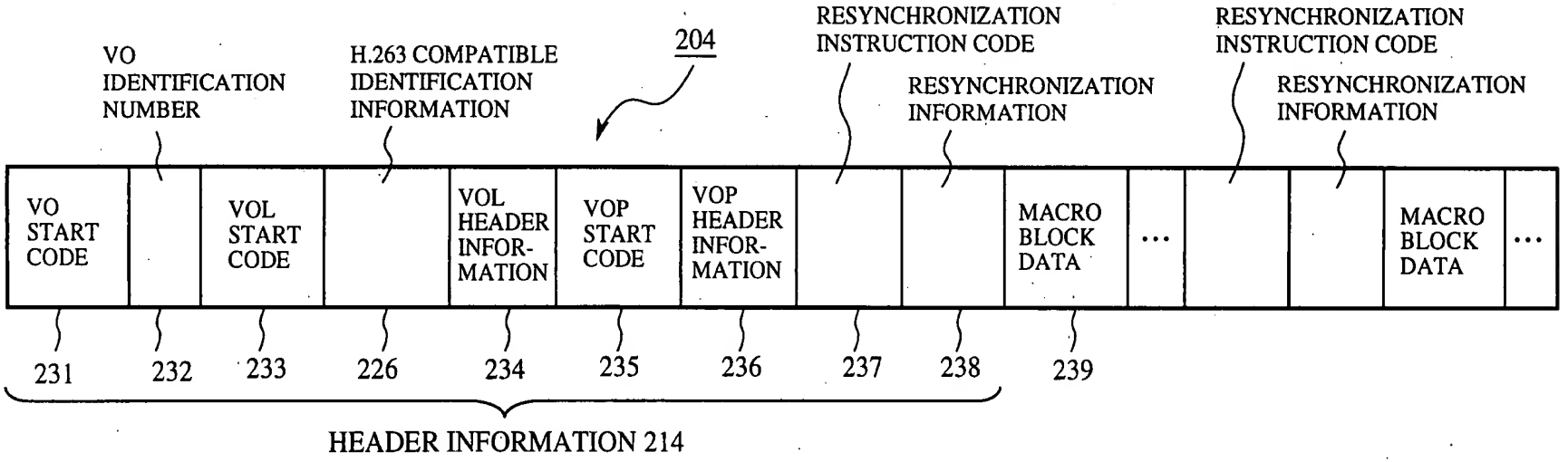

FIG.3

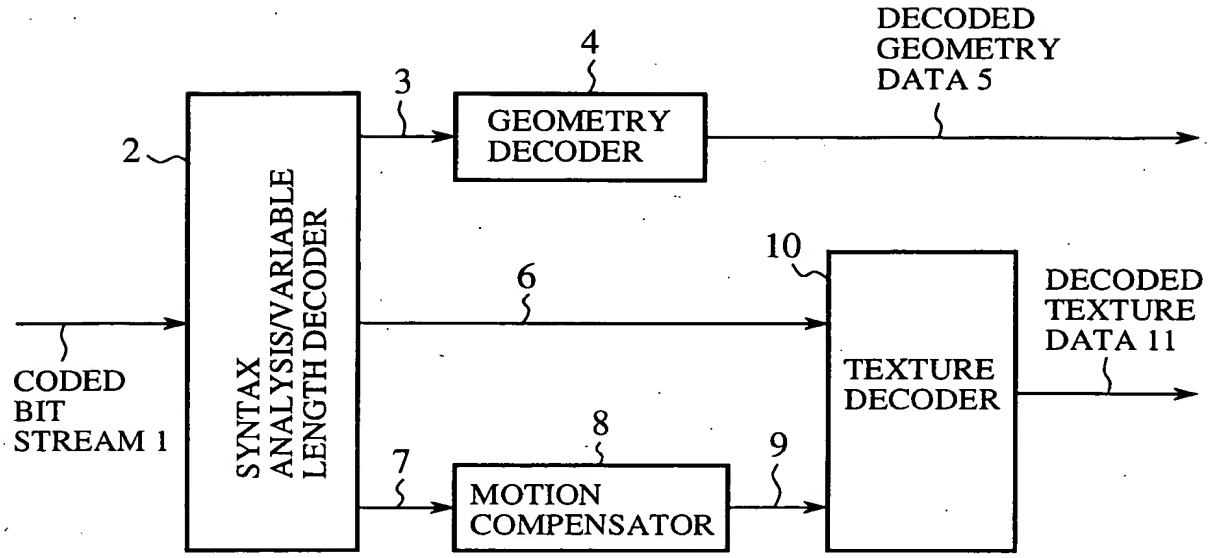
DECODED
GEOMETRY
DATA 5
4
3
GEOMETRY
DECODER
2
SYNTAX
ANALYSIS/VARIABLE
LENGTH DECODER
10
6
DECODED
TEXTURE
DATA 11
TEXTURE
DECODER
CODED
BIT
STREAM 1
8
7
9
MOTION
COMPENSATOR

FIG.4

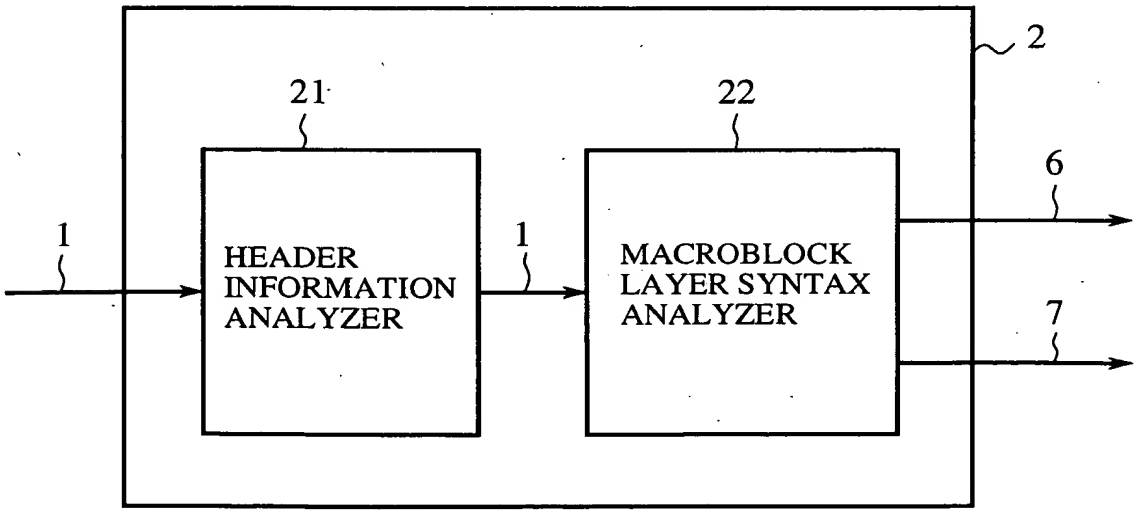
2
21
22
6
1
HEADER
INFORMATION
ANALYZER
1
MACROBLOCK
LAYER SYNTAX
ANALYZER
7

FIG.5

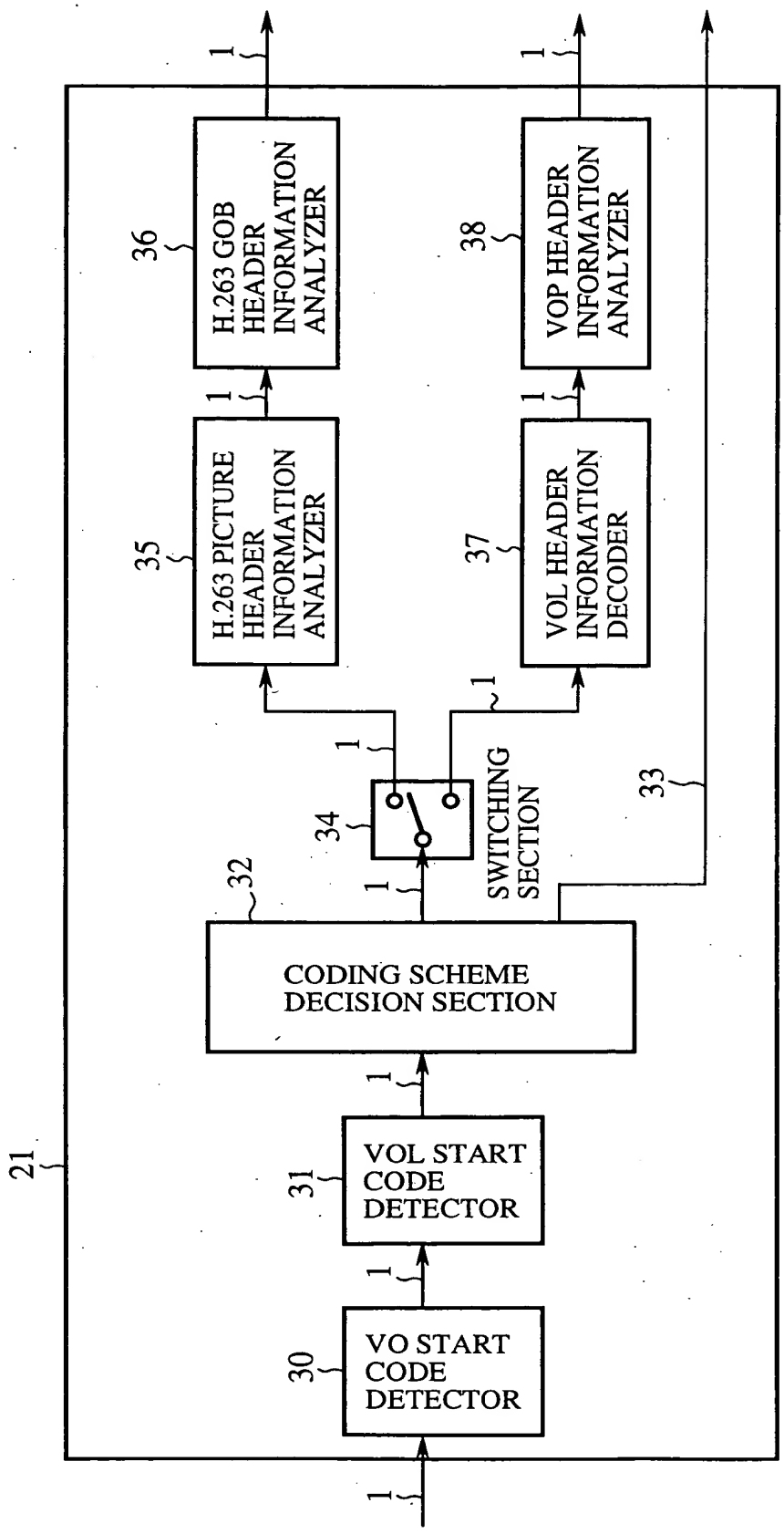
21
30
VO START CODE DETECTOR
31
VOL START CODE DETECTOR
32
CODING SCHEME DECISION SECTION
33
34
SWITCHING SECTION
35
H.263 PICTURE HEADER INFORMATION ANALYZER
36
H.263 GOB HEADER INFORMATION ANALYZER
37
VOL HEADER INFORMATION DECODER
38
VOP HEADER INFORMATION ANALYZER
1

FIG.6

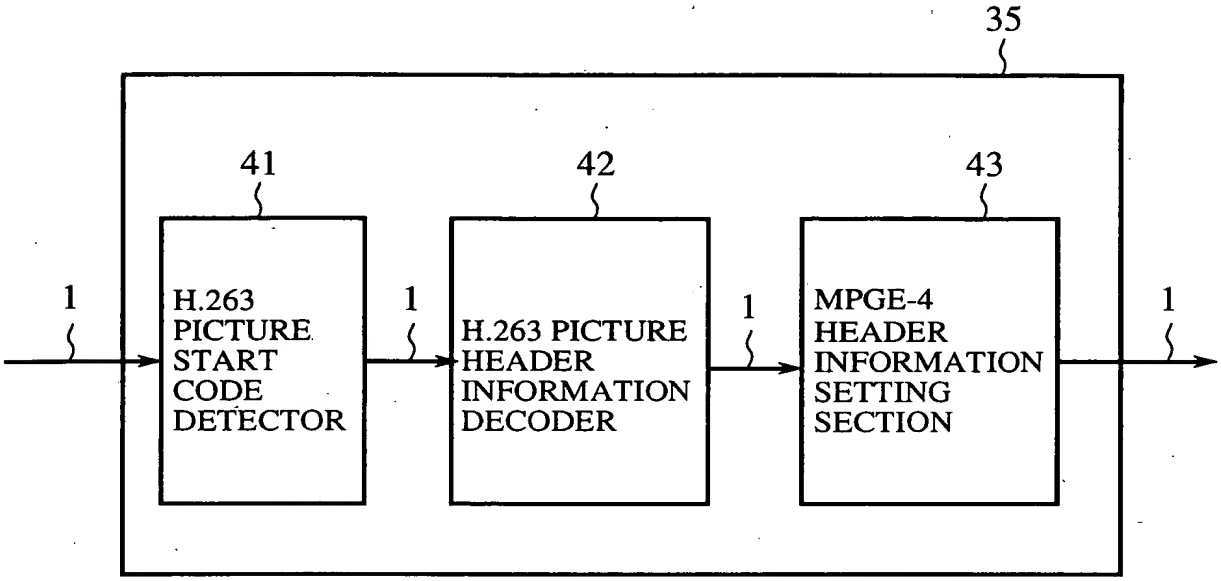
35
41
42
43
1
H.263 PICTURE START CODE DETECTOR
1
H.263 PICTURE HEADER INFORMATION DECODER
1
MPGE-4 HEADER INFORMATION SETTING SECTION
1

FIG.8

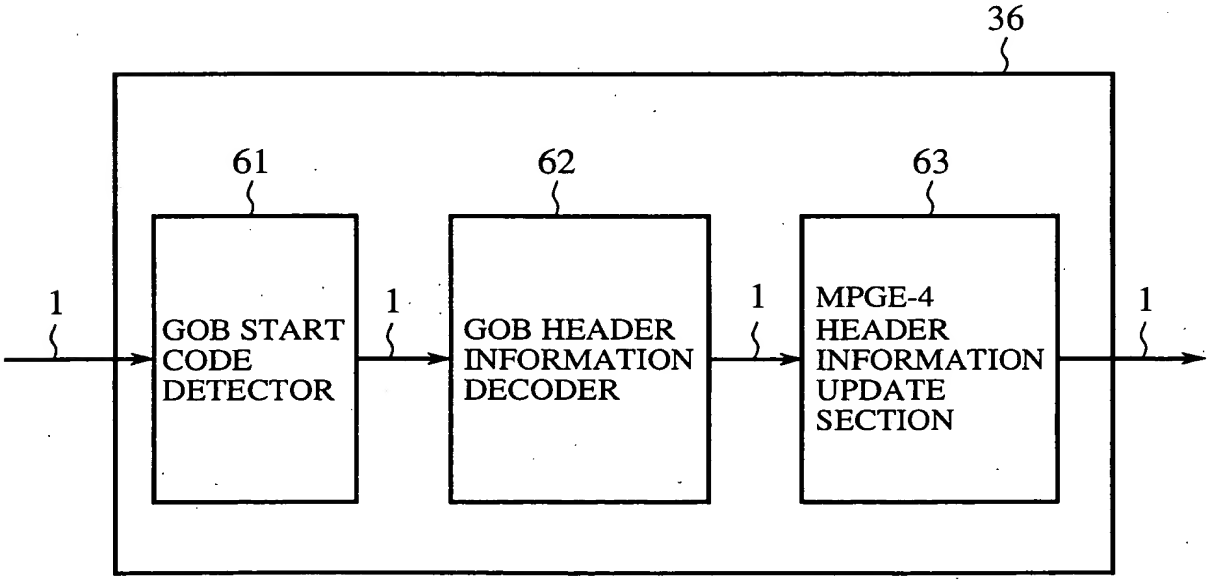
36
61
62
63
1
GOB START CODE DETECTOR
1
GOB HEADER INFORMATION DECODER
1
MPGE-4 HEADER INFORMATION UPDATE SECTION
1

FIG.7

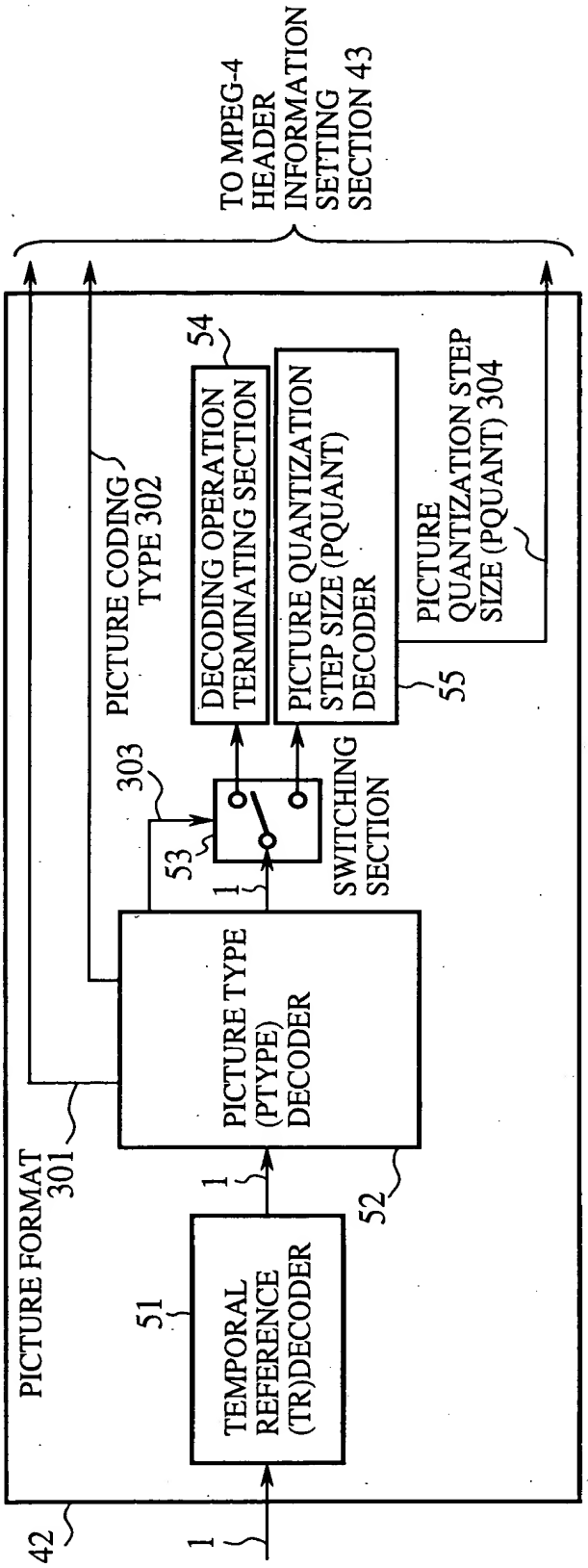
TO MPEG-4 HEADER INFORMATION SETTING SECTION 43
PICTURE CODING TYPE 302
PICTURE FORMAT 301
303
53
SWITCHING SECTION
DECODING OPERATION TERMINATING SECTION
54
PICTURE QUANTIZATION STEP SIZE (PQUANT) DECODER
55
PICTURE QUANTIZATION STEP SIZE (PQUANT) 304
PICTURE TYPE (PTYPE) DECODER
52
TEMPORAL REFERENCE (TR)DECODER
51
42
1

FIG.11

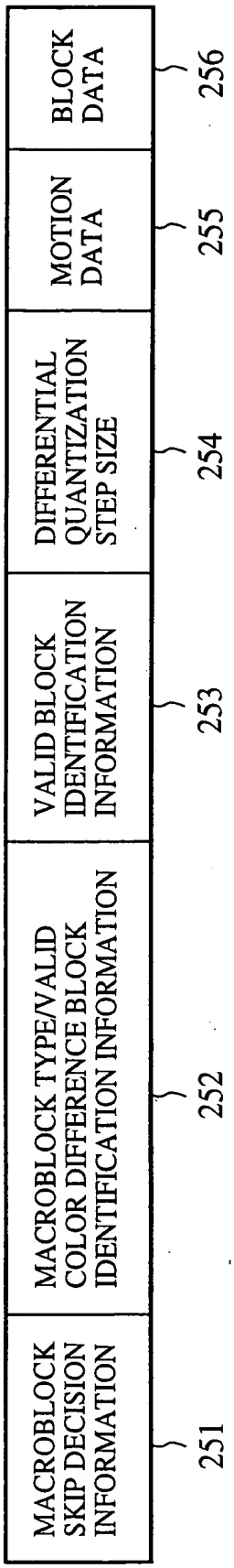
MACROBLOCK SKIP DECISION INFORMATION
251
MACROBLOCK TYPE/VALID COLOR DIFFERENCE BLOCK IDENTIFICATION INFORMATION
252
VALID BLOCK IDENTIFICATION INFORMATION
253
DIFFERENTIAL QUANTIZATION STEP SIZE
254
MOTION DATA
255
BLOCK DATA
256

FIG.9

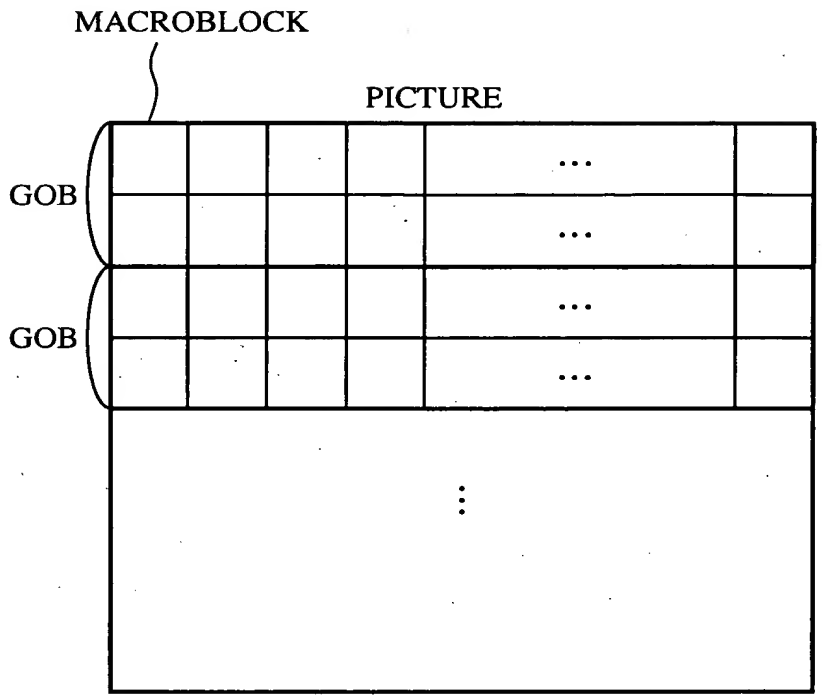
MACROBLOCK
PICTURE
GOB
GOB

FIG.10

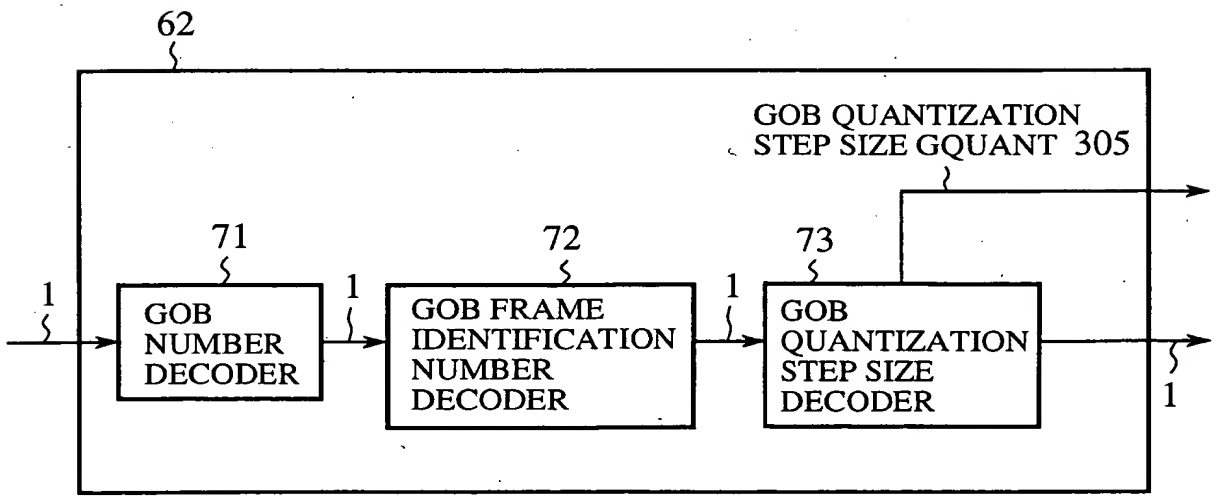
62
GOB QUANTIZATION STEP SIZE GQUANT 305
71
72
73
1
GOB NUMBER DECODER
1
GOB FRAME IDENTIFICATION NUMBER DECODER
1
GOB QUANTIZATION STEP SIZE DECODER
1

FIG.12

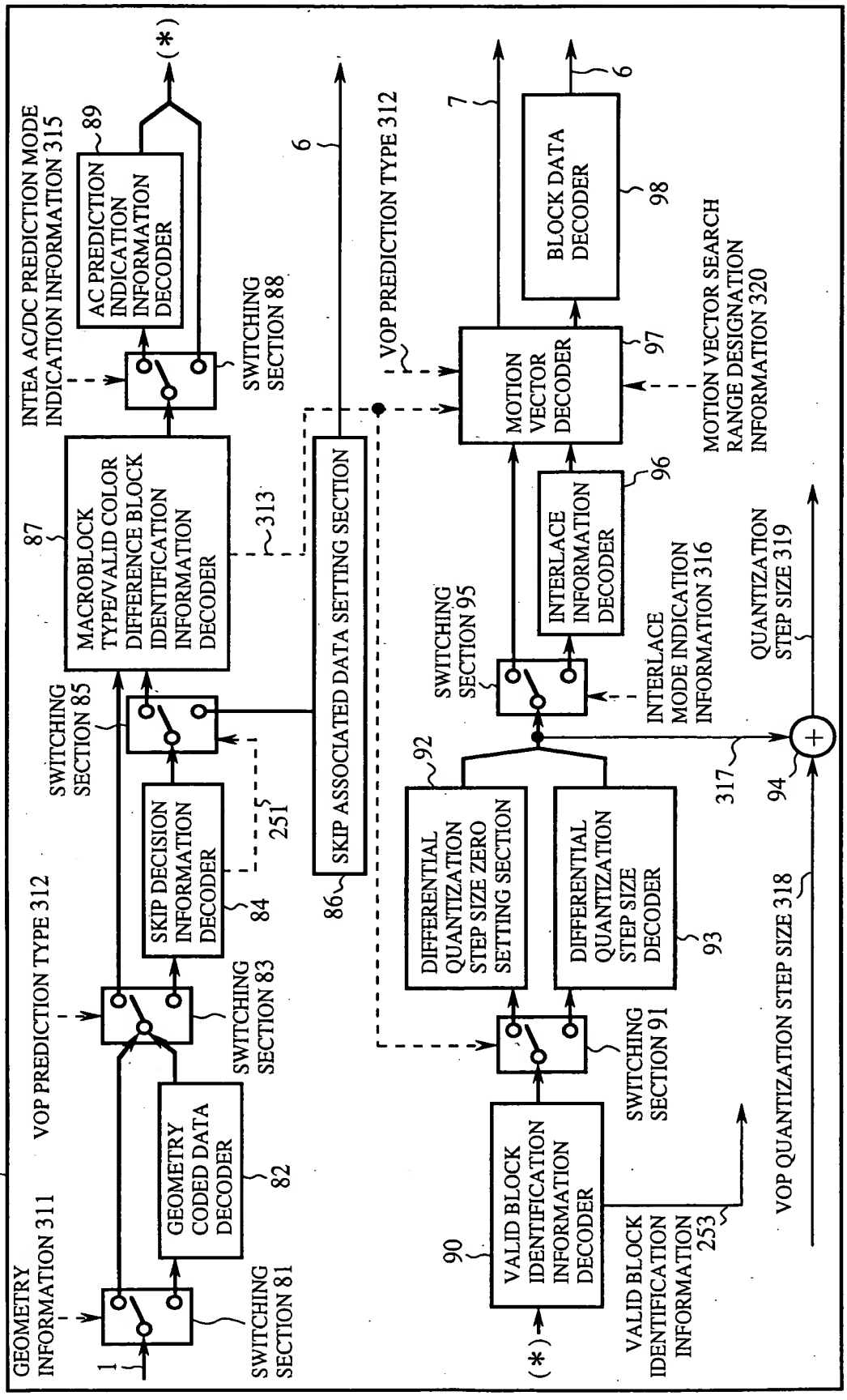
22
GEOMETRY INFORMATION 311
VOP PREDICTION TYPE 312
SWITCHING SECTION 81
GEOMETRY CODED DATA DECODER 82
SWITCHING SECTION 83
SKIP DECISION INFORMATION DECODER 84
SWITCHING SECTION 85
MACROBLOCK TYPE/VALID COLOR DIFFERENCE BLOCK IDENTIFICATION INFORMATION DECODER 87
AC PREDICTION INDICATION INFORMATION DECODER 89
INTEA AC/DC PREDICTION MODE INDICATION INFORMATION 315
SWITCHING SECTION 88
313
251
SKIP ASSOCIATED DATA SETTING SECTION 86
6
7
VOP PREDICTION TYPE 312
VALID BLOCK IDENTIFICATION INFORMATION DECODER 90
SWITCHING SECTION 91
DIFFERENTIAL QUANTIZATION STEP SIZE ZERO SETTING SECTION 92
DIFFERENTIAL QUANTIZATION STEP SIZE DECODER 93
SWITCHING SECTION 95
INTERLACE INFORMATION DECODER 96
MOTION VECTOR DECODER 97
BLOCK DATA DECODER 98
MOTION VECTOR SEARCH RANGE DESIGNATION INFORMATION 320
INTERLACE MODE INDICATION INFORMATION 316
QUANTIZATION STEP SIZE 319
317
94
VOP QUANTIZATION STEP SIZE 318
VALID BLOCK IDENTIFICATION INFORMATION 253
(*)
FLOW OF BIT STREAM

FIG.13

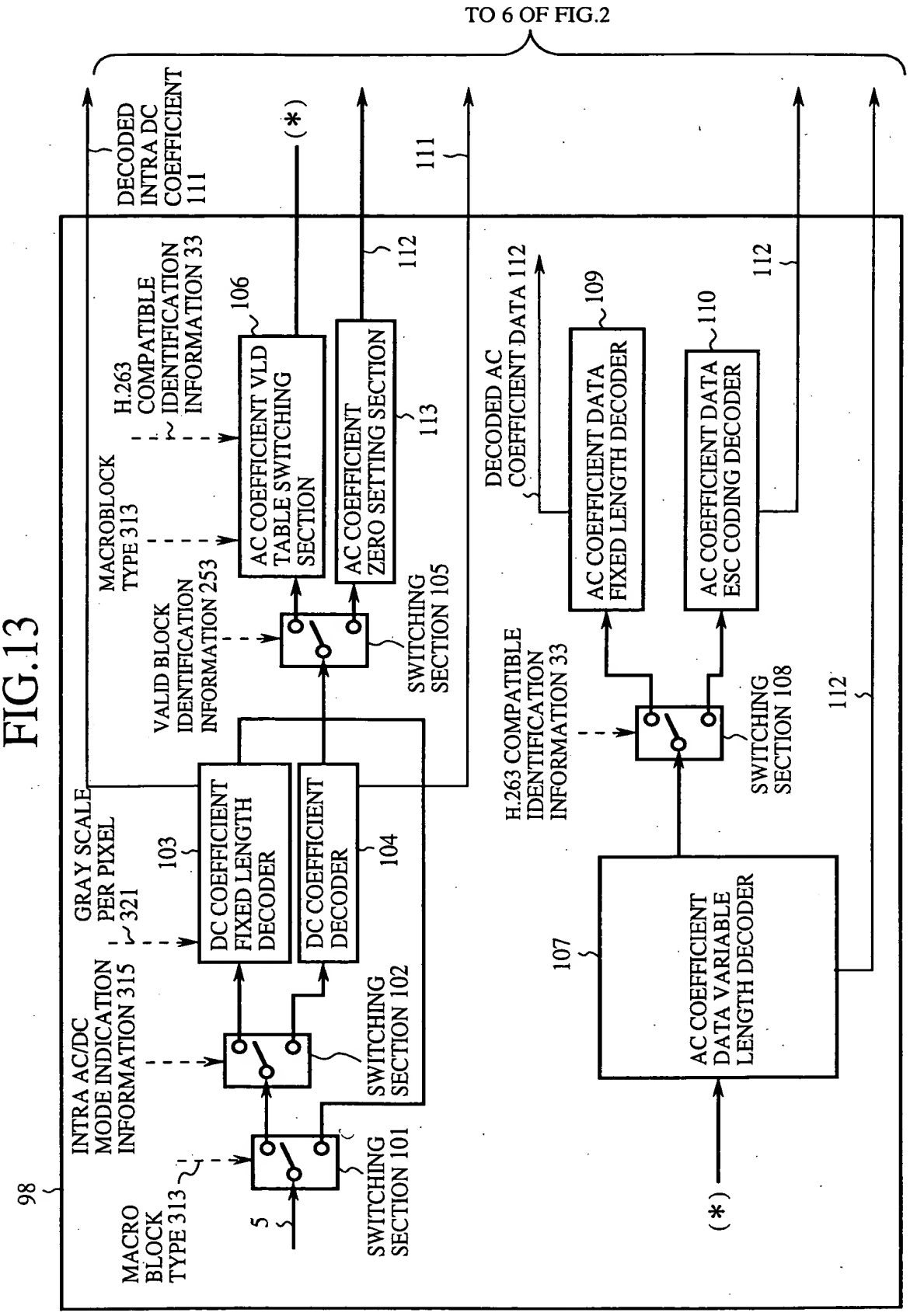
TO 6 OF FIG.2
DECODED INTRA DC COEFFICIENT 111
111
(*)
H.263 COMPATIBLE IDENTIFICATION INFORMATION 33
MACROBLOCK TYPE 313
VALID BLOCK IDENTIFICATION INFORMATION 253
106
AC COEFFICIENT VLD TABLE SWITCHING SECTION
AC COEFFICIENT ZERO SETTING SECTION
112
113
SWITCHING SECTION 105
DECODED AC COEFFICIENT DATA 112
109
AC COEFFICIENT DATA FIXED LENGTH DECODER
110
AC COEFFICIENT DATA ESC CODING DECODER
112
H.263 COMPATIBLE IDENTIFICATION INFORMATION 33
SWITCHING SECTION 108
112
GRAY SCALE PER PIXEL 321
103
DC COEFFICIENT FIXED LENGTH DECODER
104
DC COEFFICIENT DECODER
INTRA AC/DC MODE INDICATION INFORMATION 315
SWITCHING SECTION 102
MACRO BLOCK TYPE 313
5
SWITCHING SECTION 101
98
107
AC COEFFICIENT DATA VARIABLE LENGTH DECODER
(*)
FLOW OF BIT STREAM

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FIG.14(a)

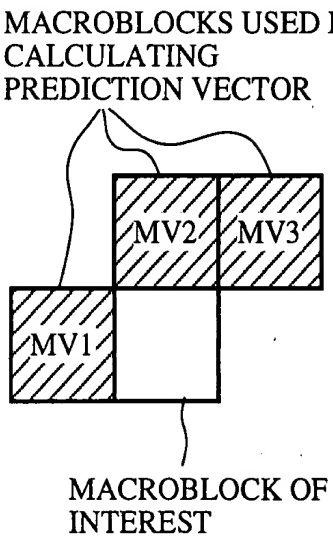


FIG.14(b)

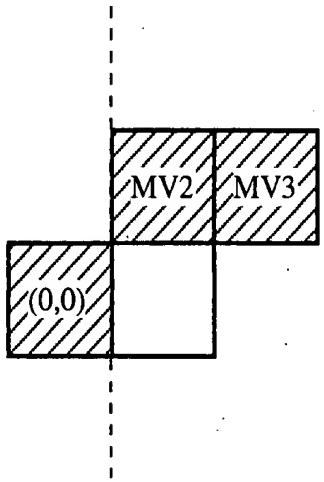


FIG.14(c)

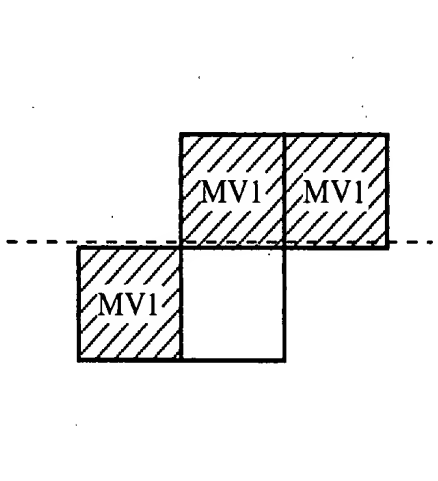
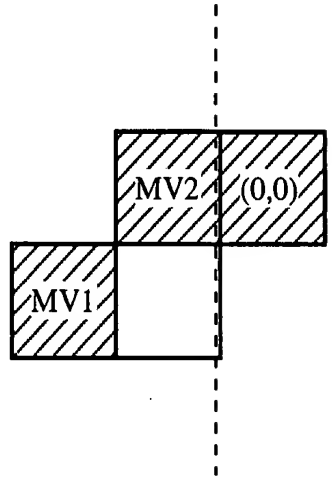


FIG.14(d)



------- VOP BOUNDARY (GOB BOUNDARY WHEN DETECTING GOB HEADER)

FIG.15

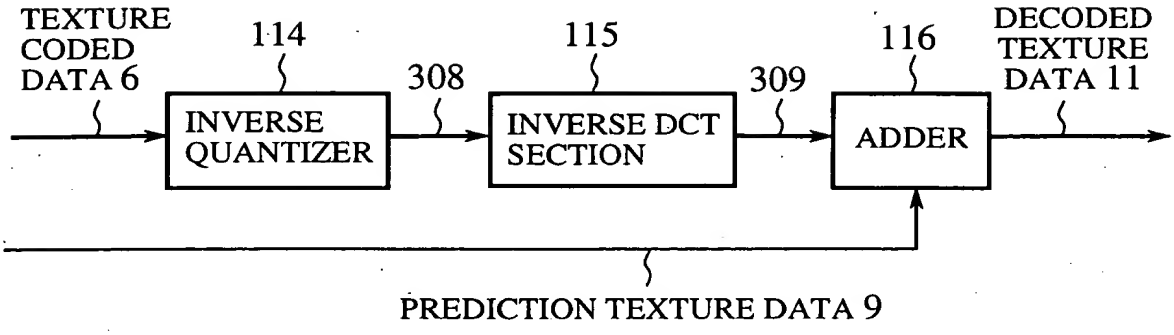


FIG.17

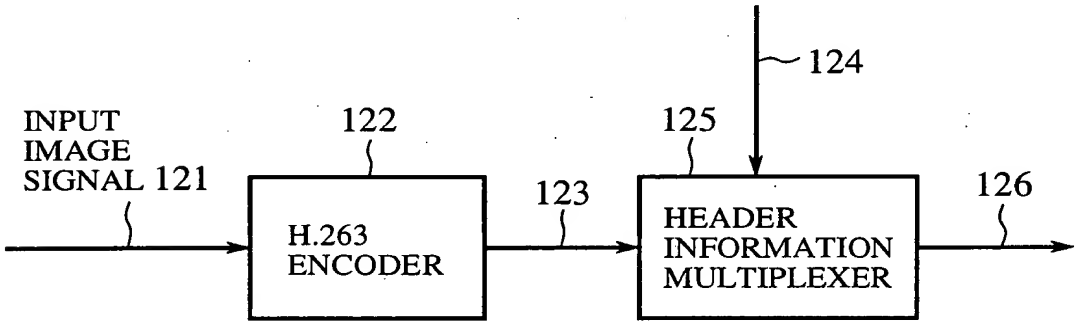


FIG.18

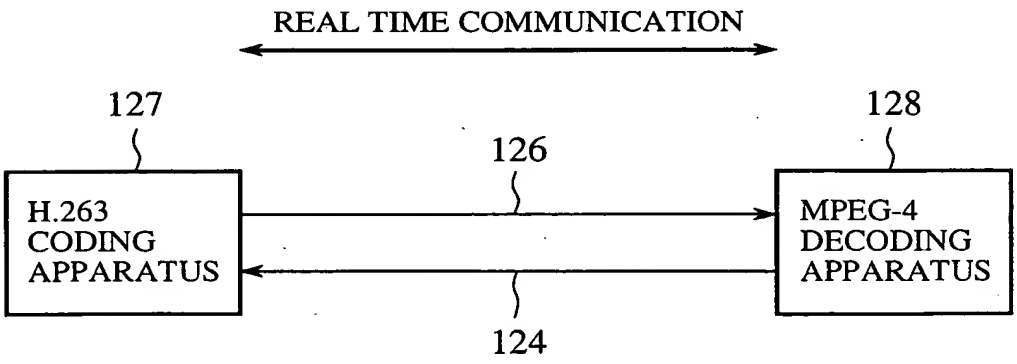


FIG.16

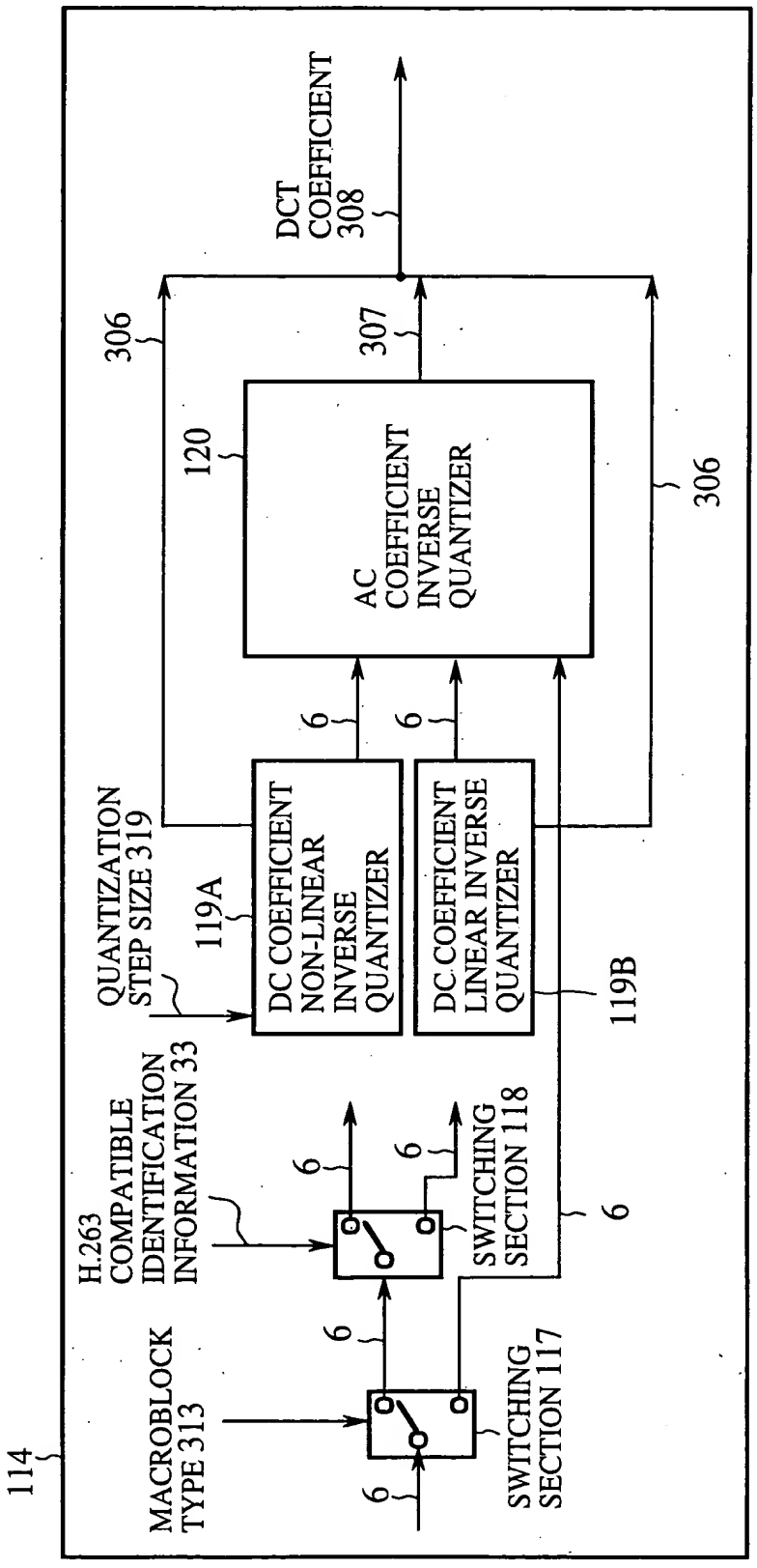

114
MACROBLOCK TYPE 313
H.263 COMPATIBLE IDENTIFICATION INFORMATION 33
SWITCHING SECTION 117
SWITCHING SECTION 118
6
QUANTIZATION STEP SIZE 319
119A
DC COEFFICIENT NON-LINEAR INVERSE QUANTIZER
DC COEFFICIENT LINEAR INVERSE QUANTIZER
119B
120
AC COEFFICIENT INVERSE QUANTIZER
306
307
DCT COEFFICIENT 308

FIG.19

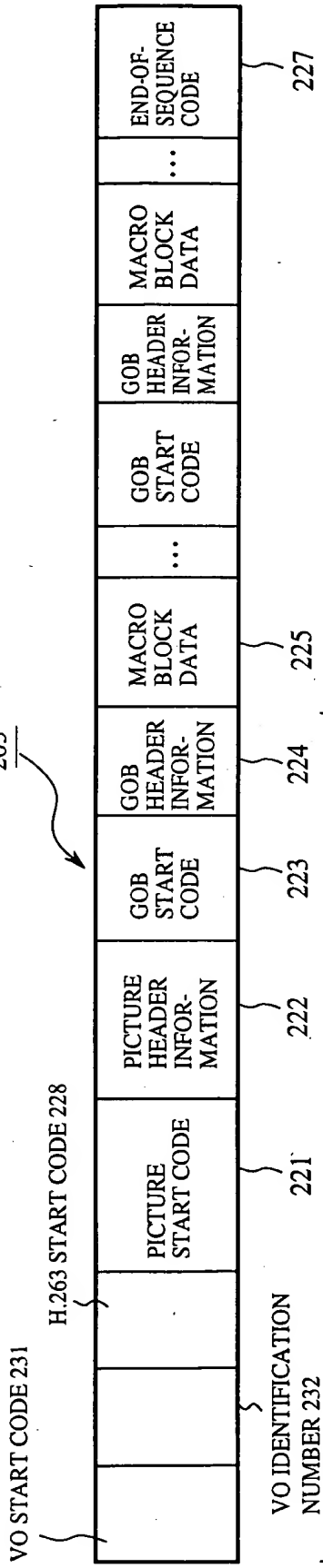

203
VO START CODE 231
H.263 START CODE 228
VO IDENTIFICATION NUMBER 232
PICTURE START CODE
PICTURE HEADER INFOR-MATION
GOB START CODE
GOB HEADER INFOR-MATION
MACRO BLOCK DATA
...
GOB START CODE
GOB HEADER INFOR-MATION
MACRO BLOCK DATA
...
END-OF-SEQUENCE CODE
221
222
223
224
225
227
HEADER INFORMATION 215

FIG.20

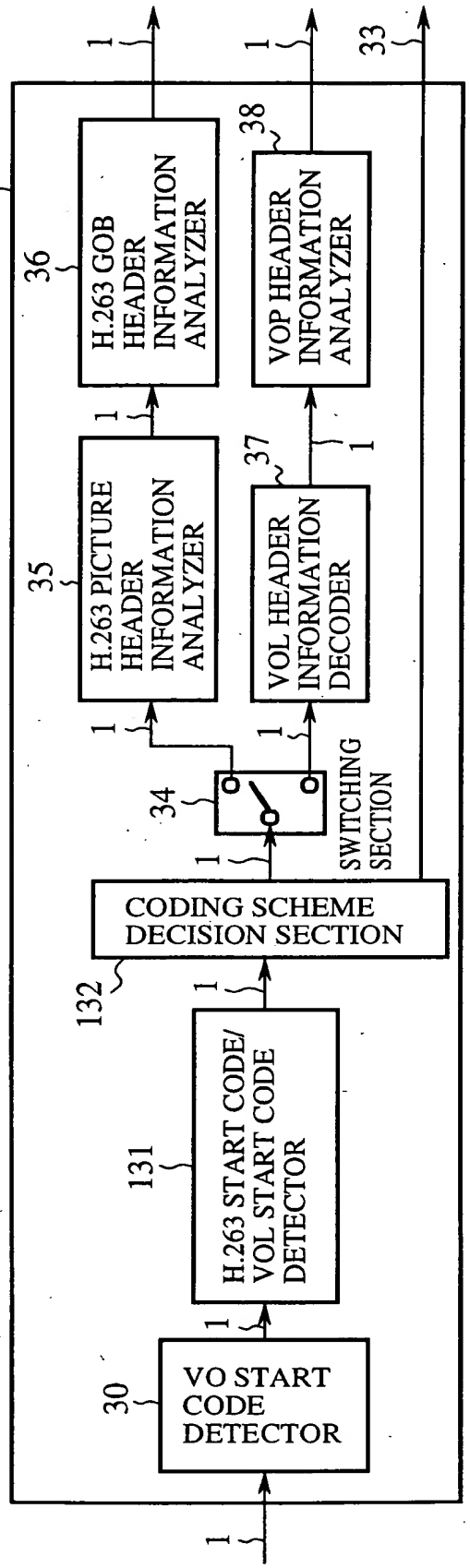

21
30
VO START CODE DETECTOR
131
H.263 START CODE/ VOL START CODE DETECTOR
132
CODING SCHEME DECISION SECTION
34
SWITCHING SECTION
35
H.263 PICTURE HEADER INFORMATION ANALYZER
36
H.263 GOB HEADER INFORMATION ANALYZER
37
VOL HEADER INFORMATION DECODER
38
VOP HEADER INFORMATION ANALYZER
33
1

FIG.21

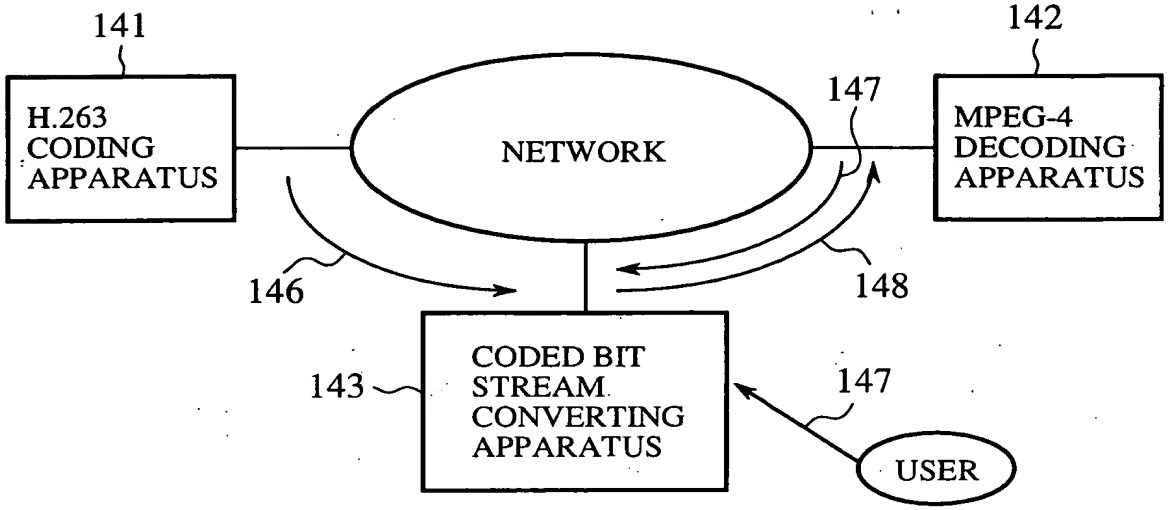
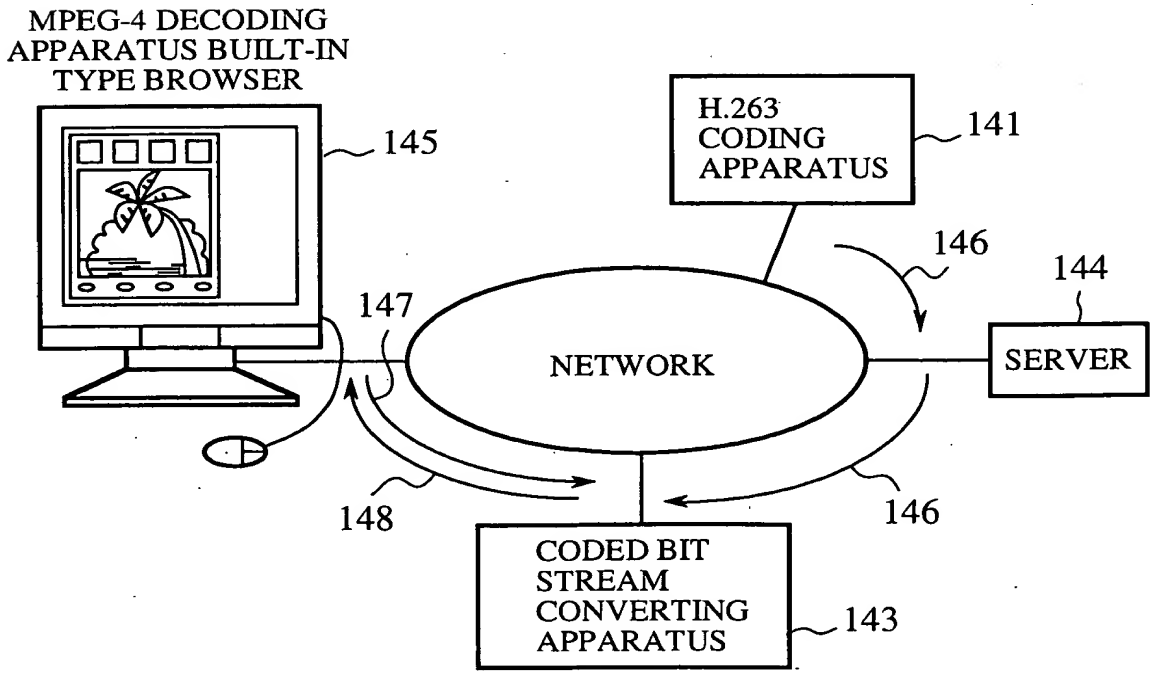

141
H.263
CODING
APPARATUS
NETWORK
147
142
MPEG-4
DECODING
APPARATUS
146
148
143
CODED BIT
STREAM
CONVERTING
APPARATUS
147
USER

FIG.22


MPEG-4 DECODING
APPARATUS BUILT-IN
TYPE BROWSER
145
H.263
CODING
APPARATUS
141
146
144
147
NETWORK
SERVER
148
146
CODED BIT
STREAM
CONVERTING
APPARATUS
143

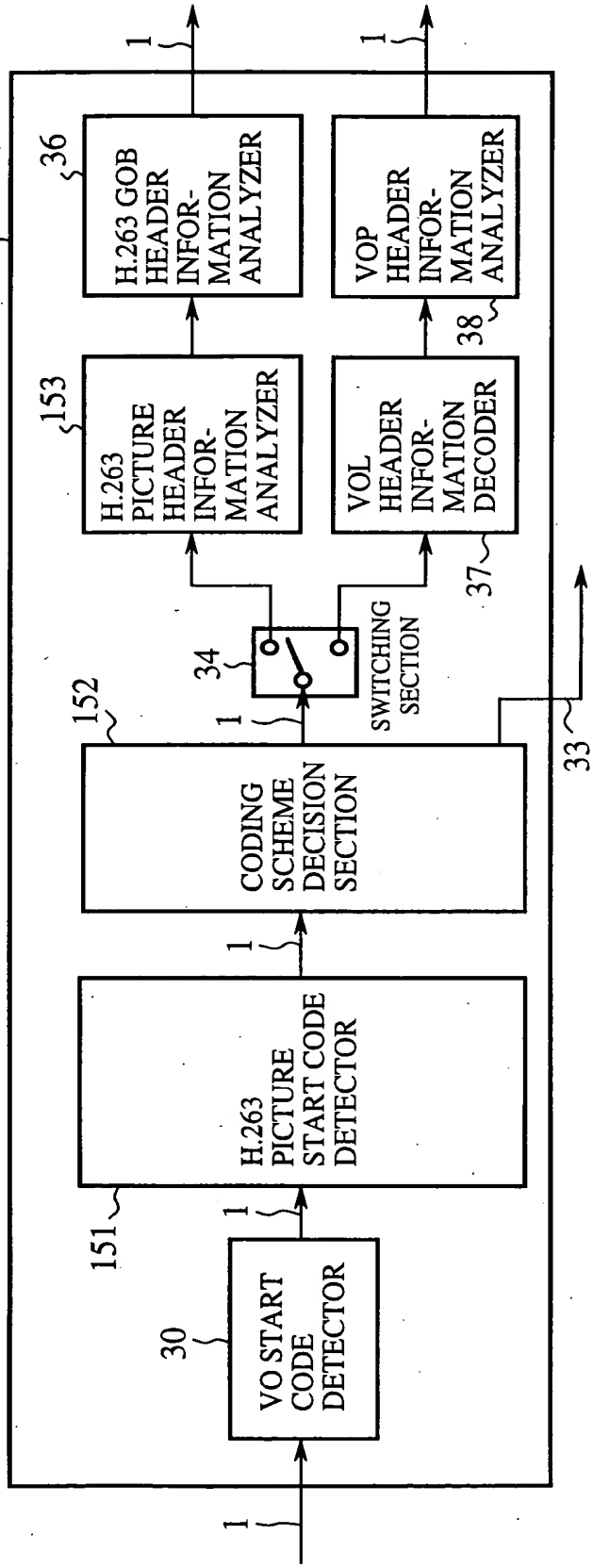

21
1
1
36
H.263 GOB HEADER INFOR-MATION ANALYZER
VOP HEADER INFOR-MATION ANALYZER
153
H.263 PICTURE HEADER INFOR-MATION ANALYZER
VOL HEADER INFOR-MATION DECODER
38
37
34
SWITCHING SECTION
152
CODING SCHEME DECISION SECTION
33
151
H.263 PICTURE START CODE DETECTOR
30
VO START CODE DETECTOR

FIG.23

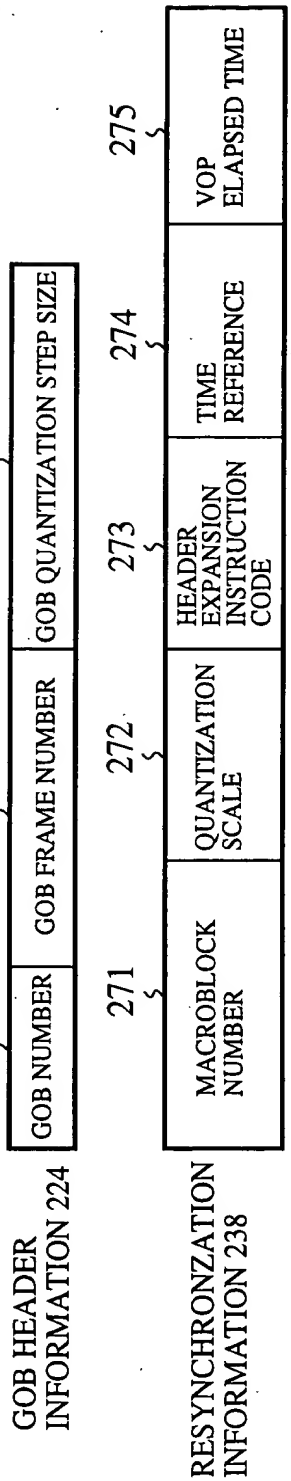

GOB HEADER INFORMATION 224
261
GOB NUMBER
262
GOB FRAME NUMBER
263
GOB QUANTIZATION STEP SIZE
RESYNCHRONZATION INFORMATION 238
271
MACROBLOCK NUMBER
272
QUANTIZATION SCALE
273
HEADER EXPANSION INSTRUCTION CODE
274
TIME REFERENCE
275
VOP ELAPSED TIME

FIG.26

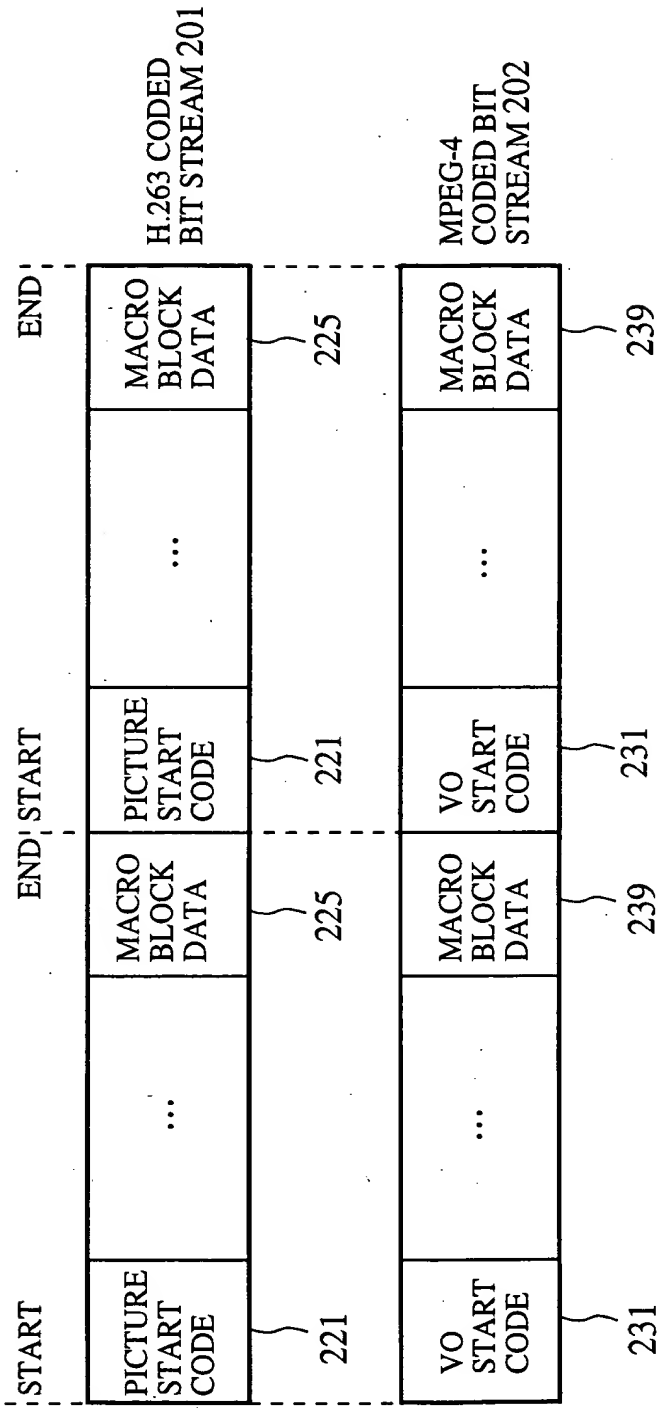


FIG.24(a)

FIG.24(b)

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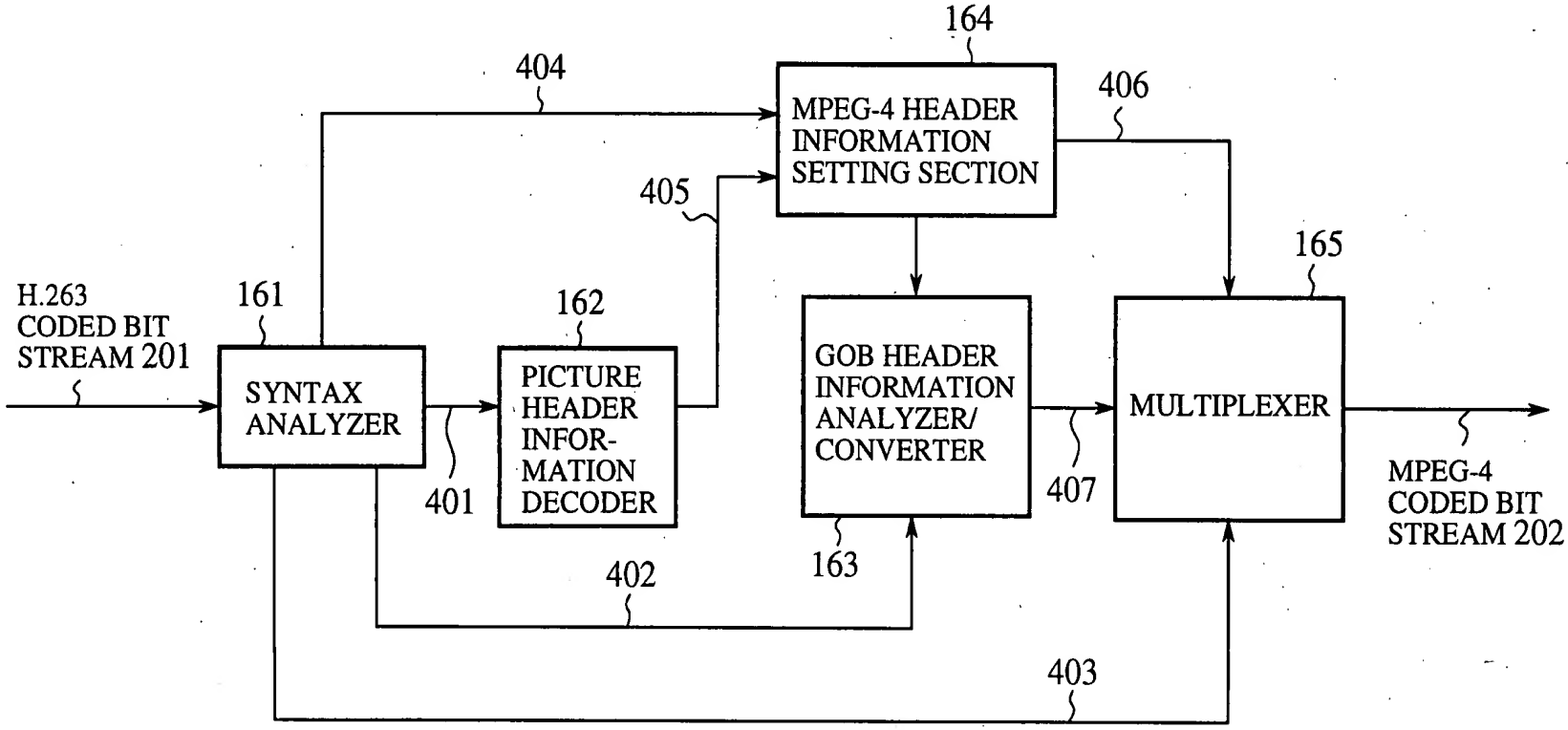
FIG.25